

BA/EN  
WR ND  
Mail Stop 60190

AUG 06 1990

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Memorandum

To: ARD, Refuges and Wildlife (60130)  
Attention: Dale Henry

From: Regional Engineer, Region 6

Subject: 1989-1990 Annual Water Use Report/Management Plan

The subject report for Tewaukon National Wildlife Refuge has been reviewed and approved as submitted. Although you mentioned Lake Tewaukon/White Lake under the Declarations of Filing, it might be helpful if you listed the water right:

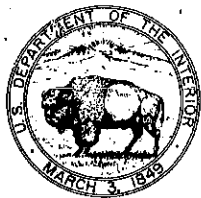
Declaration of Filing, dated September 1, 1934, for Lake Tewaukon and East and West White Lake (including Cutler Marsh), 7198 AF storage 4251 AF seasonal from Wild Rice River.

One minor comment: Why are depths given but no elevations on the page 2 discussion of Hepi Lake?

Please extend our thanks to Refuge personnel for the timely submission of this report.

/s/ WILLIAM A. RUSBY

bcc: EN rf  
Circ rf (2)  
EN:LCoe:lc:7-31-90



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
TEWAUKON NATIONAL WILDLIFE REFUGE  
RR #1, BOX 75  
CAYUGA, NORTH DAKOTA 58013



## MEMORANDUM

January 22, 1990

To: R&W, Associate Manager ND (60130)  
Denver, CO

From: Refuge Manager, Tewaukon NWR Complex (62660)  
Cayuga, ND

Subject: 1990 Annual Water Management Plan and 1989 Use Report

### 1. List of Water Rights

Tewaukon NWR #1261: 7,139 acre-feet yearly (4,852 storage and 2,287 seasonal use) for Lake Tewaukon (Pool 1) and Pools 2, 3, 4, 11 and 12 dated December 1964, diversion by dams across the Wild Rice River.

Declaration of Filing (#57) dated September 1, 1934 claimed 397 acre-feet storage and 312 acre-feet seasonal use for Clouds Lake (Pool 8) now calling Hepi Lake. Listed on the same sheet as Lake Tewaukon/White Lake, as per RO(EN) Marshall Fox's 11-14-83 memo.

Tewaukon NWR #1262: 1,130 acre-feet yearly (635 acre-feet storage and 495 acre-feet seasonal use) for Sprague Lake, dated December 1964, diversion from an unnamed creek in the SE1/4NW1/4, Section 2.

Tewaukon NWR #1263: 686 acre-feet yearly for Mann Lake (236 acre-feet) and Horseshoe Slough (450 acre-feet) dated December 1964, diversion from the Wild Rice River.

Tewaukon NWR #3816 Nickeson Tract: 571 acre-feet (474 acre-feet storage, 97 acre-feet annual use) for the Nickeson Bottoms, a tract jointly owned by the ND Game and Fish Department, US Bureau of Reclamation and USFWS. Diversion is from the Wild Rice River, W 1/2 Section 27, T. 130 LTL N., R. 54 W. Priority date August 15, 1985.

### 2. Water Use - 1989

The Wild Rice River, LaBelle Creek, Frenier Dam Outlet and Sprague Lake Creek flowed well above average this year, exceeding management levels in all wetlands. The Wild Rice River flowed until the end of July, which is about two weeks longer than normal. Most wetlands on the Refuge were filled by the above normal runoff, and they held water into freeze-up.

JAN 26 1990

Pool 1 (Lake Tewaukon): The lake was frozen at 1147.28 (1148.0 is full pool and virtually never is attained in the fall after a summer of evaporation loss). Inflow began on March 27, and rapid runoff from LaBelle Creek caused the dike at the East end of Lake Tewaukon to be overtopped by about two feet. This sudden rise and high winds caused severe damage to the dike and significant bank erosion along the shore. The stop-logs were pulled on April 1 to contain the outflow in the river channel, in order to protect the new unvegetated spillway constructed in 1988. On April 4 outflow peaked at 1149.71 and a full pool of 1148.0 was reached on May 8, 1989.

Parker Bay (east end of Lake Tewaukon): All inflow from LaBelle Creek was diverted into Parker's Bay to raise the water level to benefit waterfowl, and to take pressure off the East Dike of Lake Tewaukon. Ice damage occurred to the screw gate on this structure which was repaired and converted to a stop-log structure.

Pool 2 (Cutler Marsh): This pool was very low (almost dry) but filled rapidly due to flooding. It reached 1153.50 on April 3 and remained above operating level until the operating level of 1151.5 MSL was reached on July 1, 1989. After the water warmed up in early May, a small amount was released to allow commercial fishermen to remove 140,000 pounds of carp. In order to facilitate riprapping of this pool a drawdown was started on August 16. Riprapping of the earthen dams on Pools 2, 3 and 4 was completed on November 1.

Pool 2A: 2A was dry and filled to a depth of 8 feet with spring runoff. At freeze-up depth was 2 feet.

Pool 3 (Maka Pool): This pool was at about 1146.0 when spring runoff began and was passing water on March 27. It peaked at 1156.5 on April 1 and was kept high throughout the year (1156.2-1156.5) to provide nesting sites for over water nesters and retard cattail invasion. At freeze-up the level of this pool was 1154.20.

Pool 3A: This pool was filled to the same level as Pool 3 and remained that way all year. Muskrat work was noticed in this pool. The establishing population should open up the rank cattail stands.

Pool 4 (River Pool): This pool was dry but filled rapidly due to the flooding and peaked at 1160.87 on April 4. Several boards were pulled to keep the flow from washing around the dam, and the removal of an ice jam under the township bridge downstream from the Pool 4 structure prevented severe washing of the road. The pool began slowly dropping and went into freeze-up at 1157.5. <sup>note</sup>^

Pool 5, 5A, 6, 7, 7A: As usual, all pools started very dry but rapidly filled during the rapid runoff. All remained full throughout the year, except for Pool 5 which was dry by freeze-up.

Pool 8 (Hepi Lake): Heavy inflow overfilled this unit, and all but one of our duck and goose nesting structures were overtopped. A maximum depth of 9.54 feet was reached on April 13. By June 2 it had dropped down to about 2.5 feet which is the desired management level. This pool not only provides excellent brood

habitat, but was utilized by 25,000-30,000 geese and 30,000 mallards in late October. Hepi Lake froze-up below the gauge.

Pool 10: This pool was dry, but we were able to back water out of Hepi Lake. Maximum depth was 6 feet in the center and 2 feet around the edge. Several duck and goose broods were seen in this pool.

Pool 11 (West White Lake): This unit was full all year. Openings created during the previous winter by scraping cattails with the payloador remained open all year providing very good habitat. This was one of the best pools for waterfowl in 1989.

Pool 12 (East White Lake): This was the second year that we have tried to dry out this pool to reestablish cattails and bulrush. The pool was held below the informal gauge; however, we might be getting some seepage from Pool 11 as the water level did not drop as fast as other pools this summer.

Pool 13 (Mann Lake): This pool was dry in 1988, and millet was seeded into the lake bed. It was flooded with 2 1/2 feet of water this spring and attracted 20,000 feeding mallards during their migration north. It held about 2 feet of water at freeze-up and was heavily used by ducks all year.

Pool 14 (Sprague Lake): This is a fishing lake, but the population winter killed this year and spring test netting showed almost no survival. This spring it was approximately 3 feet deep, but heavy inflows caused it to breach its bank and flood a township road. High water allowed us to fill several wetlands, but it also caused severe bank erosion. The outlet channel does not allow the flow to be passed quickly enough. The lake was restocked with walleyes during the summer. Freeze-up occurred at a depth of 7.2 feet.

Pool 16 (Horseshoe Slough Group): Thanks to the heavy flows in the Wild Rice River and Sprague Lake Creek, water was gravity flowed to fill this group of 8 wetlands (244 wet acres) completely. All pools provided excellent waterfowl habitat.

### 3. Impoundment Data

Please see the attached chart for capacities for each pool at various elevations. No formal inflow/outflow records were maintained. Please see Section #2 above for elevation changes for the various pools.

### 4. 1990 Plans

If 1990 is a dry year, we plan to hold all the water we can to maximize waterfowl production in each pool. If we get enough runoff we will attempt to manage the pools as follows:

Pool 1 (Lake Tewaukon): Fill to about 1150.0 MSL to allow flow into adjacent dry wetlands on the Krause WPA, Tewaukon WMA, and the Refuge. After these wetlands have received adequate water, the lake will be lowered to the maximum management level of 1148.0 MSL for sport fishery habitat. The lake may have to be lowered for construction purposes later in the year.

Parker Bay (east end of Lake Tewaukon): Flood to a maximum of four feet as early as possible in the spring before duck nesting occurs. Maintain a 2-1/2 - 3 foot depth for waterfowl production by adding water as needed in late spring and summer.

Pool 2 (Cutler Marsh): Fill the pool to 1151.5 MSL to flood dense cattails in the west end without killing vegetation in the lower end. When the water temperatures are correct, small amounts of water will be released in May-August to help commercial fishermen net carp.

Pool 3 (Maka Pool): Fill full to approximately 1156.2 and stabilize as quickly as possible before over-water duck nesting is initiated. If needed, supply water to Pools 2A and 3A. Supply water to Nickeson Bottoms as described in the next section. Hold water at maximum depth to slow cattail invasion. If DU funding for the interior dike becomes available the pool will be drawn down in the fall to allow dike construction.

Nickeson Bottoms: Flood to a depth of approximately 4 feet as quickly as possible to kill cattails but still minimize carp invasion. Maintain this depth to continue cattail control and encourage establishment of a muskrat population. Muskrats will further aid in cattail control and their lodges will provide waterfowl nesting and loafing sites.

Pool 4 (River Pool): Refill to 1159.5 to retard cattail invasion and maintain muskrat populations.

Pools 2A, 3A, 5, 5A, 6, 7, 7A: If possible, fill to maximum depth to flood cattails. If there is insufficient water, drawdown Pool 7 and add as much water as is available to Pools 5, 5A, and 6. Water from Pool 3 can be used to fill Pools 2A and 3A.

Pool 8 (Hepi Lake): Initially 5-6 feet of water may be needed to supply Pools 7A, 7, 6, 5A, 5, 3A, and 2A downstream. Draw the pool down to 4 feet as soon as possible to maintain cattail and bulrush stands.

Pool 9: If possible keep water out of this pool and allow it to dry up. Drying will allow some cattails to reestablish.

Pool 10: Allow this pool to fill naturally or open the supply ditch control and flood to a maximum of 2-1/2 feet. This wetland should be maintained at this level; over-filling would probably flood out the excellent stand of bulrush. It should be allowed to go dry by late August to maintain its highest use as a semi-permanent wetland.

Pool 11 (West White Lake): Maintain depth at 4 - 4-1/2 feet to slow cattail invasion. If necessary pump water from Pool 12 into this pool.

Pool 12 (East White Lake): Add no water to this pool. Allow gradual drying to reestablish cattails. If necessary pump water into Pool 11.

Pool 13 (Mann Lake): Add 3 feet of water to this pool in order to enhance newly established cattails and bulrush stands.

Pool 14 (Sprague Lake): Fill to maximum pool, about 8-1/2 feet in order to maintain the sport fishery.

Pool 16 (Horseshoe Slough): Gravity flow water from the Wild Rice River to fill all pools. Some pumping may be necessary to top these pools off. Pool A should attain the level of 1207.5 MSL and all others about 1206 MSL.

5. Location Map

Please see Section #2 for the revised Refuge Map on which all management pools are marked.

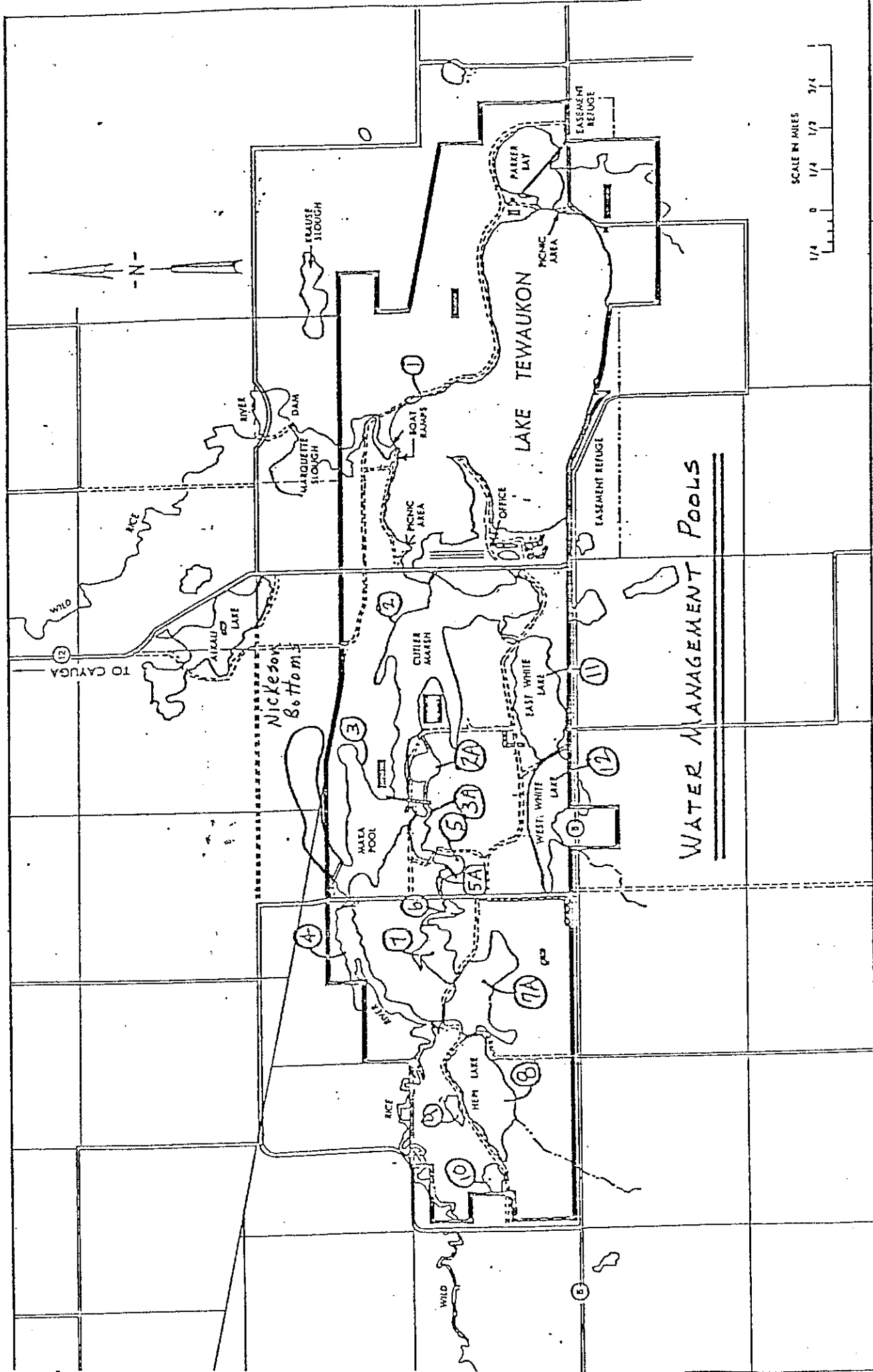
*Jack Halbe*  
Acting Refuge Manager

TEWAUKON NATIONAL WILDLIFE REFUGE  
Pools, Elevations and Acres

12/12/85

Pool 1 - Tewaukon	1149	1015
- Parker's Bay	1149	95
Pool 2 - Cutler's Marsh	1152	246
Pool 2A		30
Pool 3 - Maka Pool	1156	125
Pool 3A		18
Pool 4 - River Pool	1159	108
Pool 5	1160	6
Pool 5A		5
Pool 6	1165	6
Pool 7	1178	21
Pool 7A		106
Pool 8 - Hepi Lake	1179	106
Pool 9	1167	10
Pool 10	1173	5.5
Pool 11 - W. White Lake	1151	80
Pool 12 - E. White Lake	1147	103
Pool 13 - Mann Lake	1207	57
Pool 14 - Sprague Lake	1209	186
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Pool 16 - Horseshoe Slough		244
Pool 1	1210	119.7
Pool 2	1206	42.5
Pool 3	1206	10.3
Pool 4	1206	30.3+
Pool 5	1206	24.5
Pool 6	1206	2.8+
Pool 7	1206	14.5

# TEWAUKON NWR







WATER USE REPORT/  
MANAGEMENT PLAN  
SHORT FORMLake Elsie NWR, Richland County  
Station NameDeclaration of Filing: Aug. 30, 1937  
Water Right No.(522 acre-feet storage)  
(900 acre-feet seasonal)Water Diverted: Yes      No X\*Impoundment(s): Yes      No X\*Well(s):  
Free Flowing none-known gpm  
Pumped              gpmSummer 1989 (date not recorded)  
Date of InspectionMinor local runoff, at least two drainage  
Source(s) ditches, several springsMeans of Diversion none  
Rate                     Water Level 2,850 acre-feet  
(Elevation or Est. Storage Amount)Type of Use:  
Surface Irrigation                       
(Crop)                       
Fish & Wildlife XX  
Stock                       
Domestic                       
Other high public use: swimming, water  
skiing, fishing.

Overall Climactic Conditions: 1989 was wet. Heavy spring runoff and regular summer rains occurred through July.

Condition of Facilities: No facilities present.

Proposed Water Program: None, no water management capability is present. At maximum, the lake spills north through a (damaged) culvert.

Comments: The lake is an extremely popular summer recreational area.

Fred G. Giese  
Fred G. Giese, Refuge Manager Date

\*If more than one impoundment or well, please attach additional sheet.

EXHIBIT 5

**WATER USE REPORT/  
MANAGEMENT PLAN  
SHORT FORM**

Storm Lake NWR, Sargent County  
**Station Name**

Declaration of Filing: Aug. 30, 1937  
**Water Right No.**

(729 acre-feet storage)  
(516 acre-feet seasonal)

**Water Diverted:** Yes ☐ No ☒

**\*Impoundment(s):** Yes ☐ No ☒

**\*Well(s):**  
Free Flowing none gpm  
Pumped            gpm

Summer 1989 (date not recorded)  
**Date of Inspection**

Drainage ditch (legal)  
**Source(s)**

**Means of Diversion** uncontrolled ditch  
**Rate** unknown

**Water Level** estimate 654 acre-feet  
**(Elevation or Est. Storage Amount)**

**Type of Use:**  
Surface Irrigation                                   
(Crop)                                   
Fish & Wildlife ☒ (virtually no public use)  
Stock                                   
Domestic                                   
Other                                 

**Overall Climactic Conditions:** 1989 was wet. Heavy spring runoff and regular summer rains occurred through July.

**Condition of Facilities:** A diversion dam at the head of the feeder ditch serving Storm Lake washed out well before 1976, as far as I can find out. Apparently someone decided it wasn't worth repairing. I have concurred with this decision.

**Proposed Water Program:** No water management capability is present. Water runs down the ditch into the lake to an unknown degree each spring. Water did not run in 1989 due to heavy snow and ice accumulations in the ditch.

**Comments:** The lake serves as an excellent waterfowl loafing sanctuary with good use by snow geese, canvasbacks and tundra swans. Water levels fluctuate on their own. If active management was initiated some degree of improvement might be gained by a cycle of drawdown management. It is questionable if the benefits would be worth the costs; further review is planned. The Golf Course Association of Milnor has requested the use of lake water to irrigate portions of the Storm Lake Golf Course and applied for a water right with the ND State Water Commission. The Association was granted a conditional water right junior to that of the FWS and the refuge staff is evaluating the situation.

**\*If more than one impoundment or well, please attach additional sheet.**

Fred G. Giese  
**Fred G. Giese, Refuge Manager**            **Date**